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ECONOMIC COMMISSION FOR ASIA AND THE FAR EAST

CAMBODIA, LAOS, THAILAND AND VIET-NAM

Committee for Coordination of Investigations
of the Lower Mekong Basin
Nineteenth session
8-14 January 1963
Vientiane (Laos)

NOTE BY THE BAUXITE MISSION

(Mission Française de Recherche de Bauxite
dans le bassin inférieur du Mékong)

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Scope of the Mission

Our investigations in Thailand not having resulted in any promising indications, bauxite prospection activities will be directed during 1963 to Cambodia, Laos and Viêt-Nam.

Geology and research. Programme

A.- This new series of investigations, which will be conducted on the same satisfactorily lines as in Thailand, will include two main phases:

1) In the laboratory, selection of areas that appear promising both from the geological and geomorphological viewpoints, on the basis of geological and topographical material and of a stereoscopic study of the aerial coverage.

2) In the field, checking of the said areas as to the presence of bauxite-bearing deposits.

The examination of several geological documents and aerial photographs showed that prospection work could in particular be directed upon:

- the karstic Permian limestone outcrops in the regions of Battambang and Kampot in Cambodia, which also cover extensive areas in Laos. It may be recalled in this connection that fossil bauxito-lateritic deposits have been located in the karstic areas of these Permian limestone formations in Eastern Tonkin.
  Also that Mr E. SAURIN, Professor at Saigon University, discovered an interesting indication in the shape of an ancient bauxite-bearing layer in a karstic Permian limestone formation near Sisophon in Cambodia.

- the great rhyolitic and dacitic areas in northern and western Cambodia, where pagodite - hydrated aluminum silicate (kaolinite) - deposits resulting from deep chemical alteration of feldspathic rhyolites are known to exist. The presence with that characteristic kaolinic rock of elements

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containing a still higher alumina percentage, including bauxite clay and laterite, in the geomorphologically favourable zones over the great rhyolitic/dacitic outcrops, cannot be discounted à priori.

- the tertiary and old quaternary basalts which form extensive tablelands in Viêt-Nam, South Laos and Eastern and Northern Cambodia. It may be further pointed out that photogeological study showed that the extensive Plateau des Cardamomes, in Western Cambodia, must in several areas be topped with ancient basaltic outflows.

In connection with those volcanic rocks, which occur very frequently in Cambodia, Laos, and South Viêt-Nam, it is interesting to note that they give through decomposition under tropical climatic conditions, extensive pedological covers of "red soils" on the tabular mountains. Such fertile "red soils", well known to agronomers, may contain from 35 to 46% alumina. Chemical analyses may show interesting ratio of Al_2O_3/SiO_2, higher than 0.85 which is that of theoretical kaolinite. Furthermore, a study of those clays already shows a certain level of bauxitisation. Let us finally observe that in Tonkin the existence of true bauxites in the red clays resulting from basaltic alteration has been reported. An analysis gave 53% Al_2O_3, 10% Fe_2O_3 and 1% SiO_2.

Installation of the Mission

1) Arrived in Phnom-Penh on November 16, were were received by Mr Francis ROUX, Chef de la Mission Française d'Aide Economique et Technique in Cambodia, who kindly helped us get introduced to officials interested in the Bauxite Mission.

Since we have been in Phnom-Penh, we have attended to administrative, documentary and technical aspects of our work. We also made a stereoscopic study of the aerial coverage of the SW and W parts of Cambodia.

2) Equipment

All the Mission's equipment - including prospection, camping and transport - was transferred from Bangkok to Phnom-Penh.

3) Personnel

As had been understood, the Service des Mines of Cambodia appointed a young engineer, Mr Peich CHONGKAI, to assist us at the Phnom-Penh laboratories and in our field work in Cambodia.

/ 4) Office...

4) Office space. Documentation

At the Service des Mines, an office was provided for geological study and storage of the various documents and equipment.

We wish to express our appreciation to Mr HENG LONG, Director of the Bureau des Mines, de l'Industrie et de l'Artisanat, and Mr Kim CHADARITH, Head of the Bureau des Mines, for their warm welcome and the help they gave us in gathering the required material.

We also thank Col. Ngin KARETH, Director of the Service Géographique des F.A.R.K., who received us in his laboratory and made available to us the aerial photographic covering of Cambodia, as well as Mr J. HENKEL, United Nations technical and photogrammetric expert attached to the Service Géographique.

Phnom-Penh, 5 January 1963

Signed: H. CRUYS Ph.D.
B.R.G.M.- Geological Expert
Chief of the Mission